



APRIL 5, 1999 VOLUME 21, ISSUE 14 Founded in 1978

WORLD

The Voice of Enterprise Computing

INTRANETS & I-COMMERCE

What's happening to workflow?

By Lynda Radosevich

INTegration with Web technologies and better ties to back-end enterprise resource planning (ERP) applications are quickly pulling workflow into the mainstream.

Rather than constructing stand-alone systems, users can now tap into embedded workflow technology in packaged applications to automate

► **WORKFLOW** page 57

Graphic omitted
per publisher. UMI

Impressive R5

■ Notes/Domino delivers killer ROI

Review: Groupware and application serving tools

By Maggie Biggs

RELEASE 5 (R5) of Lotus Development's flagship Domino server and Notes client delivers a bevy of impressive improvements, including

expanded Web capabilities and broad platform support, while blending both groupware and application server facilities into a single solution. This release, which shipped last week, is a "must-have" upgrade for current Domino and Notes cus-

► **RELEASE 5** page 30

8BXNJWT*****CAR-RT SORT**B-052
842239304150 JAN 24 00 001W14
030 121

UMI
PO BOX 984
ANN ARBOR MI 48106-0984

Distinguishing degrees:

Should you
aim for the
basic MBA
— or specialize
in technology? 87

Graphic omitted
per publisher. UMI

Grooming graduates:

Teaming up
with colleges
can help train
the talent pool for
your company. 68

Find us on the Web at www.infoworld.com

Latest Office politics rile IT

■ Move to link IE 5.0 to desktop applications frowned upon

By Bob Trott

MICROSOFT's products continue to get cozy.

Users wanting optimal performance from Office 2000 had better be prepared to sign on with other key Microsoft products, including Internet Explorer 5.0 and, whenever it becomes available, Windows 2000.

The next-generation desktop applications suite — which Microsoft will release to its biggest customers toward the end of this month, with retail availability set for June 10 — relies heavily on Explorer 5.0 for many of its Internet-enhanced features.

With the company currently embroiled in a well-publicized anti-

trust battle with the U.S. federal government, further tightening the link between one of its core products and Explorer comes at a time when many observers feel Microsoft should be minding its browser's manners. And many IT managers are skeptical.

"I think Microsoft is trying to

► **MICROSOFT** page 27

Macro virus

IT managers regroup after Melissa hits

By Matthew Nelson
and Dan Briody

IT MANAGERS FOR the next several weeks will be coping with the aftermath of the Melissa virus — perhaps the most malicious virus ever seen — and preparing for the copycats.

The virus is responsible for millions of dollars worth of damage. Melissa first affected users around the globe on March 26, springing up in countless e-mail boxes, replicating itself to user address books, and mailing an exhaustive list of pornographic Web sites.

IT officials assessed the damage. "Our team worked all weekend. They had to send out specific instructions for downloading the fix to every single employee [about 1,700 worldwide], taking into account that users were running dif-

► **MELISSA** page 30

CLIENT/SERVER: PRODUCT REVIEWS

Weighing laptop TCO

Counting costs
is not the only
answer to choosing
the best computer
for your workers

Graphic omitted
per publisher. UMI

REVIEW:
Sony's Vaio PCG-505TX works best for employees who have an office to call home. 37

COST ANALYSIS:
The laptop vs. desktop debate rests not on TCO but on productivity gains. 37



EXTRA ENTERPRISE NETWORKING REVIEWS INSIDE

PIPELINE

I For the latest in Internet commerce, visit the Focus on I-Commerce section on InfoWorld Electric at www.infoworld.com/icommerce.

ANNOUNCED

GLYPHICA this week announced InfoPortal 2.0, the latest version of the company's tool for creating personalized extranets, printing documents remotely, and converting existing documents and data into Web content. New features in InfoPortal 2.0 include a "one-button extranet" that simplifies the process of setting up secure areas of a Web site; server-side remote printing; Satellite Servers for high-volume document conversion; and an array of content templates, tools and pre-configured reports. InfoPortal 2.0, available immediately, costs \$72,500 per server. Glyphica: www.glyphica.com.

WEBSENTRIC, which sells Web-based presentation conferencing software, will run a site at www.presentation.net to host online presentations in the same way teleconferences are currently scheduled. The online conferences feature Dynamic HTML presentations, chat, audio, user interaction, and video. WebSentric: www.websentric.com.

SHIPPING

WEBTRENDS last week released WebTrends Enterprise Suite 3.5, the latest version of its Internet traffic analysis and server management product. New in this release is a streaming media cartridge that supports both RealNetworks and Microsoft streaming media servers, the company stated. This release also includes enhanced traffic reporting for dynamically created Web pages, path analysis reports, and analysis of content groups based on visitor traffic. WebTrends Enterprise Suite 3.5 costs \$14,995 an annual subscription or \$299. WebTrends Corp.: www.webtrends.com.

TALK BACK

To contact Intranets & I-Commerce section writers, send e-mail to firstname_lastname@infoworld.com.

INTRANETS & I-COMMERCE

Web-based workflow gets down to business

Continued from page 1

business processes.

Workflow split off from its document imaging parent in the early 1990s, and has since found its way into critical business applications such as electronic commerce. Among the vendors building workflow technologies into their core offerings are IBM, Microsoft, PeopleSoft, and SAP.

"Three years ago, you wouldn't have seen these kinds of names in workflow. It has grown beyond a niche technology," said Connie Moore, an analyst at the Giga Information Group, at the company's recent Business Process and Workflow Conference '99 in Orlando, Fla.

Workflow technology automates the time-consuming administrative tasks associated with paper flow, freeing people to do more important things and sometimes reducing costs. A classic application is routing forms to claims-processing

people at insurance companies, but the new entrants are taking a broader approach to workflow.

IBM, for instance, is treating workflow as an application integration tool by positioning its main product, MQSeries Workflow, as a part of the MQSeries middleware line. IBM recently shipped workflow connectors to its 390 mainframes, so now MQSeries Workflow can exchange data with applications on platforms ranging from mainframe (such as CICS and IMS) to Microsoft NT, according to Guenther Werner, an IBM product manager, in Stuttgart, Germany.

And in June, IBM will enhance the product's Web connectors. This will make it easier to build workflow applications that start on the

Graphic omitted
per publisher. UMI

Web and tap into both legacy and newer data sources, Werner said.

For instance, a customer with an insurance claim could go to an insurer's Web site, fill out a form, and initiate a process that accesses sev-

eral of the insurer's back-end systems, according to Werner.

SAP and PeopleSoft, meanwhile, are extending the workflow capabilities in their ERP applications to embrace new data types and third-party systems. These developments are meant to help users incorporate workflow into vertical, electronic-commerce applications such as customer self-service and procurement.

PeopleSoft, for instance, plans to ship in the second half of the year new applications for procurement, travel, expenses, and benefits enrollment. The new applications can incorporate external and unstructured information such as Lotus Notes documents and Web

► **WORKFLOW** page 58

HOTSEAT

For EarthWeb CEO Jack Hidary, the Internet changes the rules of business

Restructuring for the Web

WHEN 30-YEAR-OLD Jack Hidary brought his business, EarthWeb, public late last year, it was one of the most successful initial public offerings (IPOs) ever, and its success jump-started this year's Internet IPO market.

Now Hidary is building EarthWeb into a leading business-to-business Internet-commerce site for IT professionals. In a recent conversation with InfoWorld Editor at Large Lynda Radosevich, Hidary talked about his company's Internet business model and about his warnings for entrenched players.

EarthWeb is a quintessential content site, but it doesn't carry news. Why?

It didn't make sense. News is very expensive to produce. You need tons of reporters. We didn't have the money, frankly, to do that anyway, so it wasn't even an issue.

Graphic omitted
per publisher. UMI

So we decided to be complementary to those kinds of resources and work on hands-on solutions: source codes and workshops, things of that nature that allowed people to connect different kinds of technologies. Today we have about a half-million pages of reference content.

Your company is known as the one that revived the Internet IPO market. How

were you able to do that?

There are a couple of reasons. Number one is the fact that we were the first business-to-business online service to come to the public market. I think that had we been another consumer story, another sports store coming to the public market, we would have had a lot more difficulty. Businesses spend many times what consumers spend. In the IT industry alone, there's about a trillion dollars spent a year in hardware, software, and services.

You used your keynote speech at the recent Silicon Alley conference to chide large companies for being slow to embrace the Internet. What are they doing wrong?

Traditional large companies have become complacent and have not realized the full impact that the Internet will have — particularly businesses with a lot of intellectual capital, such as recording companies, publishing companies, and advertising agencies. These are companies whose product is information.

These businesses are particularly vulnerable to the Internet, because the Internet — with its scalability and its ability to service many more customers — undermines the whole economic model.

If, for example, Merrill Lynch has

13,000 brokers, which they do, and those brokers are dependent on \$100 to \$400 per trade, and if you can have an online trade happen at \$20 or \$7, that undermines that model. Either the Merrill Lynches of the world have to figure out some value added to provide beyond just the trade, or they have to restructure their business.

Restructuring is a business issue. Are there technical implications?

There certainly are technical implications. Companies are going to have to buy Web servers, they're going to have to buy more bandwidth, and that's going to have implications for infrastructure. We don't have the infrastructure in [New York]. There's not enough lines — copper lines, fiber lines — there just physically aren't enough lines today in the city to support the demand that we have.

What can the IT leaders within these threatened industries do to help push along the retooling?

The CIO has a very, very important role here, because I'm not sure that many people on the business side really understand.

It's unfortunate that the technical people have to be the ones to tell the business people how to run the business.

Hyundai extranet brings car dealers back into the fold

By Martin LaMonica

AS CONSUMERS become more savvy about purchasing via the Web, distributors of expensive products, such as cars or other durable goods, are scrambling to understand how to avoid being cut out by the Internet channel.

Manufacturer Hyundai Motor America is taking the unusual step of answering that question for its dealers.

Rather than threatening to disenfranchise its business partners by selling directly to consumers on the Internet, Hyundai this week in Detroit will unveil an extranet application designed to boost dealership business. The application lets dealers fulfill orders and set prices for Hyundai parts and accessories from consumers or repair shops.

"Instead of using the Internet to cut out dealers, we've enhanced our relationship," says Bernard Reyes, senior technical analyst at Hyundai, in Fountain Valley, Calif. "We have to keep dealers in the loop because they're our link to consumers."

There were other business reasons for Hyundai's pro-dealer stance, not the least of which was a

reputation that the quality of Hyundai's cars and parts were not up to snuff and the fact that many dealers sell Hyundais alongside other cars.

"We needed to do something to get Hyundai back to respectability," Reyes says.

The company also needs to capture more business: Many repair shops are going to sources other than dealers for replacement parts and are not necessarily buying authentic Hyundai parts.

The extranet is designed to steer parts buyers to Hyundai dealers. A repair shop establishes an account with its dealer of choice on the Web and can order from Hyundai's parts catalog, typically stored on microfiche. Consumers can also enter their ZIP code to find the nearest dealer and find parts or accessories.

In both cases, the dealer fulfills the order and has the power to set prices for its consumer customers and repair shops. As a security measure, only the dealer can check Hyundai's mainframes for the status of an order or inventory — using a green screen application that was converted to accommodate a Web front end. Dealers can also

establish passwords and security levels for employees and customers. About 200 dealers have subscribed to the extranet, which costs a token \$50 per month.

Adopting the model of dealer empowerment via electronic commerce is critical to success in durable goods industries such as the automotive industry, says Michael Ferro, the CEO of Click Interactive in Chicago, which sold and installed the e-commerce software behind the Hyundai extranet.

"Companies that have tried to disintermediate are getting black eyes from their existing customer base," which are dealers, distributors, retailers, and OEMs — not consumers, Ferro says. "Channel conflict is the issue, and changing the business culture is very important."

Click Interactive structured the extranet as a series of Windows NT servers acting as a front end to the Hyundai mainframes in California and the online parts catalog, which is hosted by the catalog publisher in

Graphic omitted per publisher. UMI

BERNARD REYES used the Hyundai extranet to bring more business to dealerships.

Ohio. The NT servers, which are hosted at local ISPs, present the graphics, make queries on the Hyundai database based on the vehicle identification number, and act as a security buffer to Hyundai's valuable data, Ferro says.

This architecture means that Hyundai did not need to change any of its back-end systems — apart from verifying data integrity — or add processing power. The software is also multicurrency and

multilingual, allowing Hyundai to roll out the application worldwide, offering the company a particular boost in Latin America, where it is looking to expand its presence.

The next step for the company is to give access to Windows CE and PalmPilot clients, Ferro says.

The implementation of the application was relatively quick — 90 days for the development and 90 days for testing — but the speed with which Hyundai made the decision to go with a dealer-focused extranet is what is truly remarkable.

"You have to have management buy-in to even consider an application like this and fortunately we had some visionaries who gave the go-ahead. They saw a presentation and said, 'Let's do it,'" Reyes explains.

Establishing this extranet architecture and business relationships lays the groundwork for many new applications and ways of doing business, Reyes and Ferro say. For example, once Hyundai gets better data on what the demand for parts is, it could start to automatically manage its inventory, or analyze customers' buying patterns.

"This is more than Web pages. In fact, it's not a Web page," Reyes says. "It's a complete business enterprise."

Workflow

Continued from page 57

pages. Also, the applications will integrate content from third-party service providers, such as Aetna and Fidelity for the benefits enrollment applications, said Rick Bergquist, chief technology officer at PeopleSoft, in Pleasanton, Calif.

SAP is building its workflow technology into its business components software. Last week, the

company made generally available its Business-to-Business Procurement component, which incorporates workflow and Web clients to let customers browse an online catalog, create purchase orders, and have workflow route the orders through the proper approval and fulfillment channels, said Steven Smith, product marketing manager for SAP's Atlanta division.

The procurement component's workflow also works with non-SAP systems. For instance, if a task requires human approval, the com-

ponent can route the task to specific people's e-mail in-boxes, as long as the e-mail systems are Messaging API-compliant, Smith said.

Microsoft steps up

Perhaps the most compelling evidence that workflow is going mainstream is Microsoft's impending involvement. Microsoft's forthcoming product, code-named Tahoe, is an upgrade to Site Server 3.0 that is expected to feature document management, workflow, Extensible Markup Language (XML) support, document version control, and template-based publishing.

The accompanying Polar Server, which includes some of the core technologies of Microsoft's SQL and Exchange Server, is expected to deliver collaboration, workflow, and document tracking.

Neither Tahoe nor Polar is expected to ship until at least six months after Windows 2000 is released — probably in mid-2000. Also, the products may be more apt in workgroup functions such as routing travel requests, not enterprise applications.

"We think when Microsoft starts shipping workflow, they will dominate office automation... but the application integration environment is not Microsoft's area,"

Moore said.

Platform or package?

For IT managers, the central question is whether to buy packaged applications with built-in workflow, or to use stand-alone workflow as an integration platform.

The benefits of packaged application workflow include the fact that it is there already, and the ERP supplier already supports it.

"For some customers, R/3 is the preponderance of their transaction systems, and we know more about R/3 than anyone so using our workflow makes sense," Smith said.

The reasons to use separate workflow technology are if the business processes are too complex to adapt to packaged software's rules or if the company has many kinds of applications involved.

Chase Manhattan Bank in New York is one company that chose to use stand-alone workflow for application integration. The bank is rolling out a facilities management application called Picasso to help the bank manage construction projects, such as renovating a floor or building a new branch. Chase uses MQSeries Workflow to deliver tasks to people involved in creating budgets and schedules, allocating costs, creating commitments, and paying

invoices. Each task is supported by an application program, databases, and clients, including Lotus Notes, Web browsers, and an MQSeries run-time client.

"We didn't see any package that met our needs," said John Dudasko, senior technology officer at Chase.

Whether the workflow engine comes with an ERP system or on its own, XML support is next on the horizon. XML is the syntax that will allow diverse workflow applications to exchange information. For instance, an online store could use XML tags and workflow triggers to take a customer's order, notify suppliers of the order, and use the shippers' tracking system to follow progress of the delivery.

"We see XML as a common language that will allow our applications to interact with themselves or with external applications. It can be an Internet replacement for EDI [electronic data interchange], enable interaction with desktop systems like Office, or display information in a browser," said PeopleSoft's Bergquist.

With standard data exchange syntax emerging and workflow engines being added to mainstream software packages, automating business processes will become the norm, not the exception.

THE WEB HOTLIST

Web sites worth checking out

1

Debian GNU/Linux www.debian.org

This site serves as the online home of Debian, an open-source operating system that uses the Linux kernel. Visitors can access Debian distribution and support information or browse Debian Weekly News, a newsletter for developers.

2

WebCriteria www.webcriteria.com

Internet start-up WebCriteria offers information about its Web site performance measurement tools and services. View a sample copy of a SiteProfile report, which includes recommendations for improving site performance.

3

Notes411 www.notes411.com

Links to thousands of Web sites and resources related to Lotus Notes and Domino can be found at this niche portal. Topics covered include industry news, training and certification, data integration, and Notes administration.

Send your URL suggestions to jim_batthey@infoworld.com.